

In the claims:

Claim 1 (original): A method for service allocation among a plurality of entities requiring service allocation in a communications or computing environment comprising the steps of:

- a) initializing a supply of services of one or more holding entities;
- b) endowing one or more bidding entities with an adjustably fixed amount of utility and a requirement for an amount of said supply of services, wherein said fixed amount of utility is a measure representative of the possibility of failure due to lack of resources;
- c) negotiating said supply of services of said holding entities, with each bidding entity bidding a selected amount of its said fixed amount of utility;
- d) redistribution of said supply of said holding entities among said bidding entities based on said negotiating.

Claim 2 (previously presented): The method of claim 1, wherein said supply of services is comprised of a plurality of resources.

Claim 3 (previously presented): The method of claim 2, wherein said plurality of resources are available at multiple service levels.

Claim 4 (previously presented): The method of claim 1, wherein said initializing, said endowing, said negotiating and said redistribution operate dynamically in response to a change in said supply of services, said fixed amount of utility or said requirement for said supply of services.

Claim 5 (previously presented): The method of claim 1, wherein said redistribution of said supply represents a guarantee of service.

Claim 6 (previously presented): The method of claim 2, wherein said resources are one or more physical devices.

Claim 7 (previously presented): The method of claim 3, wherein said multiple service levels includes said resources available at varying levels of quality.

Claim 8 (previously presented): The method of claim 3, wherein said multiple service levels includes said resources available at varying capacities.

Claim 9 (previously presented): The method of claim 3, wherein said multiple service levels are determined by resource sets.

Claim 10 (previously presented): The method of claim 1, wherein said redistribution is done deterministically.

Claim 11 (previously presented): The method of claim 1, wherein said redistribution is done statistically.

Claim 12 (previously presented): The method of claim 1, wherein said redistribution is based upon a proportion of said supply held by said holding entity using a holding price.

Claim 13 (previously presented): The method of claim 12, wherein said proportion is described by the formula:

$R_c (1 - P_c / P_b)^{\text{exp}}$, wherein R_c is the current allocation of resource to agent, P_c is the current holding price of resource as held by an individual agent, P_b is the bid price and exp is an exponent.

Claim 14 (original): The method of claim 13, wherein $\text{exp}=0.5$.

Claim 15 (previously presented): The method of claim 1, wherein each said bidding entity is represented by an agent.

Claim 16 (previously presented): The method of claim 15, wherein each said supply of services is represented by an agent.

Claim 17 (previously presented): The method of claim 16, wherein said holding entity is represented by an agent.

Claim 18 (previously presented): The method of claim 6, wherein said physical devices are a plurality of telephones, telephone interface circuits, trunk interface circuits, telephone lines and telephone switches for establishing or maintaining a voice or data communication.

Claim 19 (original): A system for service allocation among a plurality of entities requiring service allocation in a communications or computing environment comprising:

- a) one or more holding entities having a supply of services;
- b) a plurality of bidding entities endowed with an adjustably fixed amount of utility and a requirement for an amount of said supply of services, wherein said fixed amount of utility is a measure representative of the possibility of failure due to lack of resources;
- c) a broker in communication with said holding entities and said bidding entities for negotiating said supply of said holding entities, with each bidding entity bidding a selected amount of its said fixed amount of utility;

wherein said holding entity provides redistribution of said supply among said bidding entities based on said negotiating.

Claim 20 (previously presented): The system of claim 19, wherein said supply of services is comprised of a plurality of resources.

Claim 21 (previously presented): The system of claim 19, wherein said plurality of resources are available at multiple service levels.

Claim 22 (previously presented): The system of claim 19, wherein said holding entities, said bidding entities and said broker operate dynamically in response to a change in said supply of services, said fixed amount of utility or said requirement for said supply of services.

Claim 23 (previously presented): The system of claim 19, wherein said redistribution of said supply represents a guarantee of service.

Claim 24 (previously presented): The system of claim 20, wherein said resources are one or more physical devices.

Claim 25 (previously presented): The system of claim 21, wherein said multiple service levels include said resources available at varying levels of quality.

Claim 26 (previously presented): The system of claim 21, wherein said multiple service levels including resources available at varying capacities.

Claim 27 (previously presented): The system of claim 21, wherein said multiple service levels are determined by resource sets.

Claim 28 (previously presented): The system of claim 19, wherein said redistribution is done deterministically.

Claim 29 (previously presented): The system of claim 19, wherein said redistribution is done statistically.

Claim 30 (previously presented): The system of claim 19, wherein said redistribution is based upon a proportion of said supply held by said holding entities using a holding price.

Claim 31 (presently amended): The system of claim 30, wherein said proportion is described by the formula:

$R_c (1 - P_c / P_b)^{\text{exp}}$, wherein R_c is the current allocation of resource to agent, P_c is the current holding price of resource as held by an individual agent, P_b is the bid price and exp is an exponent.

Claim 32 (original): The system of claim 31, wherein $\text{exp}=0.5$.

Claim 33 (previously presented): The system of claim 19, wherein each said bidding entity is represented by an agent.

Claim 34 (previously presented): The system of claim 33, wherein each said supply of services is represented by an agent.

Claim 35 (previously presented): The system of claim 34, wherein said holding entity is represented by an agent.

Claim 36 (previously presented): The system of claim 24, wherein said physical devices are a plurality of telephones, telephone interface circuits, trunk interface circuits, telephone lines and telephone switches for establishing or maintaining a voice or data communication.